

**Notice of Allowability**

Application No.

09/735,471

Examiner

Duc C Ho

Applicant(s)

BESHA ET AL.

Art Unit

2665

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 9-10-04.
2. ☒ The allowed claim(s) is/are 3-4, 7-8, 10, 13, 19, 22-26, 28, 29, 27, 30-33, 35, 34, and 36-38. Renumbered 1-24, respectively.
3. ☒ The drawings filed on 14 December 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### Reason for allowance

1. The following is an examiner's statement of reasons for allowance:

Regarding claims 3, 4, and 7-8, the prior arts fail to teach or fairly suggest a method of segmenting variable-size packets, each packet being associated with one of a plurality of defined data streams, the method comprises a step in which the steps of concatenating and dividing are constrained by an adaptive delay threshold, and wherein the adaptive delay threshold is governed by a transfer rate controller, in combination with other limitations, as specified in the independent claim 3.

Regarding claims 10, 13, and 19, the prior arts fail to teach or fairly suggest in a switching node receiving packets from a plurality of incoming channels, a method of two-phase packet segmentation comprises a step in which the routing algorithm selects routes from an incoming channel to a sink node using a method of maximum aggregation probability, in combination with other limitations, as specified in the independent claim 10.

Regarding claims 22-29, the prior arts fail to teach or fairly suggest a data structure to enable merging equal-size null-padded data segments into new equal-size data segments having reduced null-padding, the data segments belonging to  $K > 1$  data streams, the data structure comprises a control matrix "C" having K records, each record dedicated to a data stream and having four fields to indicate, for a corresponding stream, the stream's delay threshold, the stream's current delay, the fill of a respective fractional-segment in array "A", and the address of a complete segment in array "B", in combination with other limitations, as specified in the independent claim 22.

Regarding claims 30-35, the prior arts fail to teach or fairly suggest a compact-segmentation apparatus operable to segment variable-size packets into compact fixed-size

segments, the apparatus comprises a transfer-rate controller, wherein the transfer-rate controller selects a selected data stream, and the dequeuing controller selects data segments, belonging to the selected data stream, from waiting data segments in the principle data memory and the auxiliary data memory for transfer downstream, in combination with other limitations, as specified in the independent claim 30.

Regarding claims 36-38, the prior arts fail to teach or fairly suggest a circuit for fast concatenation of a first packet of a known length and a second packet of a known length into a complete segment of a predefined length, the circuit comprises a shift connector, wherein the shift connector performs a concatenation process that concatenates the second packet with the first packet onto the register array placing any remainder resulting from the concatenation process in the memory array, in combination with other limitations, as specified in the independent claim 36.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (571) 272-3147. The examiner can normally be reached on Monday through Friday from 7:00 am to 3:30 pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

A handwritten signature in black ink, appearing to read "Duc Ho", with a long horizontal flourish extending to the right.

Duc Ho

11-03-04